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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/744,750
Filing Date: January 29, 2001
Appellant(s): SUONVIERI, JUKKA

Larry J. Hume
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 7/27/07 appealing from the Office action mailed 6/19/06.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,909,437	RHODES et al.	7-1999
6,160,992	LAHAM et al.	12-2000
5,898,382	TREATCH	4-1999
6,304,560	ARCHAMBAUD et al.	10-2001

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-5, 7-9, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rhodes et al. (U.S. Pat. 5909437) in view of Laham et al. (U.S. Pat. 6442372) and in view of Treatch (U.S. Pat. 5898382).

With respect to claim 1, Rhodes et al. discloses a method of controlling a device in a radio communication system **(See the abstract of Rhodes et al. for reference to software being downloaded from a central station of a wireless communication system to a remote subscriber station for configuring the remote subscribers station to permit wireless communication of user telecommunications equipment, devices, at the remote subscriber station)**. Rhodes et al. also discloses network elements and subscriber stations in data communication with each other **(See column 7 lines 17-26 and Figure 1 of Rhodes et al. for reference to a central terminals 10, network elements, and subscriber terminals 20, subscriber stations, in communication with each other using microwave links)**. Rhodes et al. further discloses a subscriber station management system supervising and controlling the operation of the subscriber stations by control signals transmitted via a radio path **(See column 8 lines 20-30, column 25 lines 58-62, and Figure 3 of Rhodes et al. for reference to a personal computer being provided as a site controller 56 supporting the central terminal and for reference to software, control signals, that originate from the site controller 56 being downloaded from the central terminal 10 to the subscriber unit 20, where the software is executed to control the subscriber station 20)**. Rhodes et al. also discloses that the device is connected to the subscriber station **(See column 7 lines**

38-56 and Figures 2A and 2B of Rhodes et al. for reference to devices being connected to the subscriber station 20 through network terminal unit 32). Rhodes et al. further discloses a control means arranged to the subscriber station for controlling and supervising the device **(See column 7 lines 38-56 and Figures 2A and 2B of Rhodes et al. for reference to network terminal unit 32 of subscriber unit 20 connecting to devices and controlling the operation of the peripheral devices so that the devices may communicate with the network)**. Rhodes et al. also discloses controlling the device by means of the subscriber station management system by transmitting control signals from the subscriber station management system via a radio path to the control means of the subscriber station **(See column 25 lines 58-62 of Rhodes et al. for reference to software that originates from the site controller 56 being downloaded from the central terminal 10 to the subscriber unit 20, where the software is executed to control the subscriber station)**. Rhodes et al. further discloses that in response to the control signals, the control means control and supervise the operation of the device **(See column 7 lines 38-56, column 16 lines 60-67, and Figures 2A and 2B of Rhodes et al. for reference to the subscriber unit 20 connecting to devices and controlling the operation based on software, or active code, which has been downloaded and is store in the peripheral devices)**. Rhodes et al. does not specifically disclose that the device connected to the subscriber station is a radio repeater provided with a radio receiver for receiving radio signals and with a radio transmitter for transmitting the received signals to subscriber stations in communication with other devices. Rhodes et al. also does not disclose supervising the

operation of the radio repeater such that the frequency channels received by the radio receiver and the frequency channels used by the radio transmitter change.

With respect to claim 4, Rhodes et al. discloses a radio communications system **(See Figure 1 of Rhodes et al. for reference to a radio communications system)**. Rhodes et al. also discloses subscriber stations comprising means for transmitting and receiving telecommunications signals and network elements in data transmission connection with the subscriber stations by radio signals **(See column 7 lines 17-26 and Figure 1 of Rhodes et al. for reference to a central terminals 10, network elements, and subscriber terminals 20, subscriber stations, in communication with each other using microwave links, meaning the subscriber terminals have a mean for transmitting and receiving signals over the microwave links)**. Rhodes et al. also discloses at least one subscriber station to which a device is connected **(See column 7 lines 38-56 and Figures 2A and 2B of Rhodes et al. for reference to devices being connected to the subscriber terminal 20 through network terminal unit 32)**. Rhodes et al. further discloses a subscriber station management system comprising a means controlling and supervising the operation of the subscriber stations by means of radio signals transmitted to the subscriber stations via the network elements and for supervising the device connected to the subscriber station **(See column 8 lines 20-30, column 25 lines 58-62, and Figure 3 of Rhodes et al. for reference to a personal computer being provided as a site controller 56 supporting the central terminal and for reference to software, control signals, that originate from the site controller 56 being downloaded from the central terminal**

10 to the subscriber unit 20, where the software is executed to control the subscriber station 20 and the devices connected to the subscriber station). Rhodes et al. does not specifically disclose that the device connected to the subscriber station is a radio repeater provided with a radio receiver for receiving radio signals and with a radio transmitter for transmitting the received signals to subscriber stations in communication with other devices.

With respect to claim 9, Rhodes et al. discloses a subscriber station in a communications system **(See column 6 line 66 to column 7 line 10 and Figure 1 of Rhodes et al. for reference to a subscriber terminals 20 in a communications system)**. Rhodes et al. also discloses the subscriber station having a means for transmitting and receiving communications signals over a radio path in order to set up a data transmission connection to other parts of the system **(See column 7 lines 17-26 and Figure 1 of Rhodes et al. for reference to a central terminals 10 and subscriber terminals 20, in communication with each other using microwave links, meaning that there is a means for transmitting signals to set up data transmission between the subscriber terminal and other part of the network)**. Rhodes et al. further discloses a means for controlling the operation of the subscriber station in response to control signals received via the radio path **(See column 25 lines 58-62 of Rhodes et al. for reference to software, control signals, being downloaded to the subscriber unit 20, where the software is executed to control the subscriber station)**. Rhodes et al. further discloses the subscriber station transmitting data on the state of the subscriber station to other parts of the system **(See**

column 3 lines 12-16 of Rhodes et al. for reference to the subscriber terminal sending response messages, state messages, to the central station, which is another part of the network). Rhodes et al. also discloses a connecting means for connection a device to the subscriber station **(See column 7 lines 38-56 and Figures 2A and 2B of Rhodes et al. for reference to devices being connected to the subscriber station 20 through network terminal unit 32)**. Rhodes et al. further discloses the subscriber station comprising a control means responsive to the received control signals to control and supervise the operation of the device connected to the subscriber station in response to control signals received via the radio path **(See column 8 lines 20-30, column 25 lines 58-62, and Figure 3 of Rhodes et al. for reference to a personal computer being provided as a site controller 56 supporting the central terminal and for reference to software, control signals, that originate from the site controller 56 being downloaded from the central terminal 10 to the subscriber unit 20, where the software is executed to control the subscriber station 20, which in turn uses the software to control the communications of the devices)**. Rhodes et al. does not specifically disclose that the device connected to the subscriber station is a radio repeater provided with a radio receiver for receiving radio signals and with a radio transmitter for transmitting the received signals to subscriber stations in communication with other devices.

With respect to claims 1, 4, and 9, Laham et al., in the field of communications discloses a system where a radio repeater provided with a radio receiver for receiving radio signals and with a radio transmitter for transmitting the received signals to

subscriber stations is controlled by a subscriber unit **(See column 6 line 27 to column 7 line 34 and Figure 6 of Laham et al. for reference to a repeater 30 being under control of a software and hardware system 72, which acts as a subscriber station that receives commands from a remote MCRT 20 over a wireless radio link and for reference to information being sent from a communication site 8 to a user station 28 through the repeater 30 meaning that the repeater 30 includes both a receiver for receiving radio signals and a transmitter for transmitting the received signals to the user station 28)**. Using a radio repeater provided with a radio receiver for receiving radio signals and with a radio transmitter for transmitting the received signals to subscriber stations connected to a subscriber station has the advantage of allowing repeaters, which are located in remote areas, to be controlled from one central area without the need to physically access the repeater at the remote location.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Laham et al., to combine the use of a radio repeater, as suggested by Laham et al., with the remote controlling system and method of Rhodes et al., with the motivation being to allow repeaters, which are located in remote areas, to be controlled from one central area without the need to physically access the repeater at the remote location.

While Laham et al. does disclose controlling a repeater remotely by wirelessly sending control signals to a controller of the repeater, Laham et al. does not specifically disclose that the control signals are used to change the frequency channels used by the receiver and transmitter of the repeater.

With respect to claims 1, 4, and 9, Treatch, in the field of communications discloses a radio repeater receiving signals at a control means such that the frequency channels received by the radio receiver and the frequency channels used by the radio transmitter change **(See column 3 line 45 to column 4 line 8 and Figure 4 of Treatch for reference to a repeater system 40 that includes a control computer 41 that receives signals, which are control signals, from a scanning receiver 53 that are used by the control computer 41 to change the channels, with each channel corresponding to a frequency, the repeater system 40 uses to receive and transmit data)**. Receiving signals at a control means of a radio repeater such that the frequency channels received by the radio receiver and the frequency channels used by the radio transmitter change has the advantage of allowing the frequency usage pattern of a wireless system to be changed and optimized without the need to physically access the repeaters of the system at the location of the repeaters.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Treatch, to combine receiving signals at a control means of a radio repeater such that the frequency channels received by the radio receiver and the frequency channels used by the radio transmitter change, as suggested by Treatch, with the system and method of Rhodes et al. and Laham et al., with the motivation being to allow the frequency usage pattern of a wireless system to be changed and optimized without the need to physically access the repeaters of the system at the location of the repeaters.

With respect to claim 2, Rhodes et al. also discloses that the network elements consist of base stations **(See column 7 lines 17-26 and Figure 1 of Rhodes et al. for reference to central terminals 10, which act as wireless base stations in the communication system)**.

With respect to claim 3, Rhodes et al. discloses that the control means arranged to the subscriber station comprises at least a memory and processing means **(See column 16 lines 49-59 and Figure 15 of Rhodes et al. for reference to the communications controller of the subscriber terminals 20 including flash memories 310 and 312 and a digital signal processor 258)**. Rhodes et al. also discloses storing a control program in the memory of the subscriber station to control the device **(See column 16 lines 60-67 and Figure 15 of Rhodes et al. for reference to the subscriber terminal, which controls the communications of devices attached to it, storing code to control the peripheral devices in the flash memories 310 and 312)**. Rhodes et al. further discloses adapting the processing means to control the device on the basis of the control program stored in the memory and the controls signals transmitted by the subscriber station management system **(See column 16 line 60 to column 17 line 5 of Rhodes et al. for reference to storing a downloaded program, control signals, in one of the flash memories 310 and 312 and storing another program in the other flash memory and for reference to choosing which program to use to control the devices of the system)**.

With respect to claim 5, Rhodes et al. also discloses that the network elements are of base stations **(See column 7 lines 17-26 and Figure 1 of Rhodes et al. for**

reference to central terminals 10, which act as wireless base stations in the communication system).

With respect to claim 7, Rhodes et al. discloses that the subscriber station comprises a control means for controlling and supervising the operation of the device connected to a control bus in the subscriber station and that the management system comprises a means for controlling the control means of the subscriber station via control signals transmitted to the subscriber station **(See column 8 lines 20-30, column 25 lines 58-62, and Figure 3 of Rhodes et al. for reference to a personal computer being provided as a site controller 56 supporting the central terminal and for reference to software, control signals, that originate from the site controller 56 being downloaded from the central terminal 10 to the subscriber unit 20, where the software is executed to control the subscriber station 20 and for references to the devices connected to the subscriber station being controlled and supervised by the subscriber station through a control bus in the subscriber station).**

With respect to claim 8, Rhodes et al. discloses that the subscriber station comprises a memory and processing means **(See column 16 lines 49-59 and Figure 15 of Rhodes et al. for reference to the communications controller of the subscriber terminals 20 including flash memories 310 and 312 and a digital signal processor 258).** Rhodes et al. also discloses a means for storing a control program in the memory of the subscriber station to control the device **(See column 16 lines 60-67 and Figure 15 of Rhodes et al. for reference to the subscriber terminal, which controls the communications of devices attached to it, storing code to control the**

peripheral devices in the flash memories 310 and 312). Rhodes et al. further discloses adapting the processing means to control the device on the basis of the control program stored in the memory and the controls signals transmitted by the subscriber station management system **(See column 16 line 60 to column 17 line 5 of Rhodes et al. for reference to storing a downloaded program, control signals, in one of the flash memories 310 and 312 and storing another program in the other flash memory and for reference to choosing which program to use to control the devices of the system)**.

With respect to claim 12, Rhodes et al. discloses that the subscriber station comprises a memory and processing means **(See column 16 lines 49-59 and Figure 15 of Rhodes et al. for reference to the communications controller of the subscriber terminals 20 including flash memories 310 and 312 and a digital signal processor 258)**. Rhodes et al. also discloses a means for storing a control program in the memory of the subscriber station to control the device **(See column 16 lines 60-67 and Figure 15 of Rhodes et al. for reference to the subscriber terminal, which controls the communications of devices attached to it, storing code to control the peripheral devices in the flash memories 310 and 312)**. Rhodes et al. further discloses adapting the processing means to control the device on the basis of the control program stored in the memory and the controls signals transmitted by the subscriber station management system **(See column 16 line 60 to column 17 line 5 of Rhodes et al. for reference to storing a downloaded program, control signals, in one of the flash memories 310 and 312 and storing another program in the other**

flash memory and for reference to choosing which program to use to control the devices of the system).

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 6 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rhodes et al. in view Laham et al. and Treatch and in further view of Archambaud et al. (U.S. Pat. 6304560).

With respect to claims 6 and 11, the combination of Rhodes et al., Laham et al., and Treatch does not disclose that the subscriber station, subscriber station management system, and other elements of the communications system are parts of a wireless local loop communications system, transmitting data and control signals wirelessly between the system elements.

With respect to claims 6 and 11, Archambaud et al., in the field of communications, discloses a wireless system that is a wireless local loop system with subscriber stations portable stations 18 and management systems located in wireless local loop base stations 17 **(See column 4 line 15 to column 5 line 8 and Figures 2 and 3 of Archambaud et al. for reference to the wireless local loop communication system)**. Using a wireless local loop system has the advantage of

allowing the remote programming system to be implemented in a specific wireless local loop system instead of only in a general wireless communication system.

It would have been obvious to one of ordinary skill in the art at the time of the invention, when presented with the work of Archambaud et al., to combine the used of a wireless local loop communication system, as suggested by Archambaud et al., with the system and method of Rhodes et al., Laham et al., and Treatch, with the motivation being to allow remote programming system to be implemented in a specific wireless local loop system instead of only in a general wireless communication system.

(10) Response to Argument

Regarding Applicant's discussion of Rhodes et al., the Examiner agrees that Rhodes et al. does not disclose a subscriber station supervising the operation of a radio repeater such that the frequency channels received by a radio receiver and the frequency channels used by a radio transmitter change; however, this argument is moot since the claim rejections to not rely on Rhodes et al. to disclose this limitation. Rhodes et al. teaches a system including subscriber stations (See Figures 1-2 of Rhodes et al. for reference to subscriber terminals 20), network elements (See Figures 1 and 3 of Rhodes et al. for reference to central terminal 10), and a subscriber station management subsystem (See Figure 3 of Rhodes et al. for reference to site controller 56 and element manger 58). Rhodes et al. also discloses downloading software from the subscriber station management subsystem to the subscriber stations with the software being used to control both the subscriber station as well as devices connected

to the subscriber station (See column 25 lines 58-62 and column 26 lines 21-33 of Rhodes et al. for reference to downloading software to the subscriber terminal which then executes the software to control the subscriber terminal as well as a range of devices connected to the subscriber terminal). Thus, Rhodes et a. discloses a subscriber station receiving control signals transmitted via a radio path and using the control signals to supervise the operation of the subscriber station as well as other devices connected to the subscriber station. Rhodes et al. does not disclose that a radio repeater is a type of device connected to and controlled by a subscriber station.

Regarding Applicant's discussion of Laham et al., the Examiner disagrees with the Applicant's interpretation of the teachings of Laham et al. Applicant argues that system 72 is a part of repeater 30, and thus, cannot correspond to the claimed subscriber station that controls a repeater. First, it is pointed out that it is the subscriber terminal of Rhodes et al. that is used in the rejections to teach the claimed subscriber station. However, it is also believed that the software and hardware of system of Laham et al. performs the same functions as the claimed subscriber station connected to a radio repeater. Laham et al. discloses the system 72 receiving commands from an MCRT 20 over a wireless radio link and using the commands to control and supervise the operation of the repeater (See column 6 lines 27 to column 7 line 34 and Figure 6 of Laham et al. for reference to this process). Thus the system 72 of Laham et al. performs all the functions as the claimed subscriber station connected to a radio repeater. The combination of Rhodes et al. and Laham et al. is based on a combination of Rhodes et al.'s teachings of a subscriber station receiving control signals transmitted

via a radio path and using the control signals to supervise the operation of the subscriber station as well as other devices connected to the subscriber station with Laham et al.'s teaching of a system acting as a subscriber station to receive control signals via a radio link and supervise the operation of a device that is a radio repeater. The combined teachings of Rhodes et al. and Laham et al. does not specifically disclose the claimed changing of frequency channels used by the transmitter and receiver of the radio repeater.

Regarding Applicant's discussion of Treatch, the Examiner disagrees with the Applicant's interpretation of the teachings of Treatch. Applicant argues that Treatch does not disclose controlling the operation of a radio repeater via control signals received over a radio path such that the frequency channels used by the radio receiver and the radio transmitter change; however the Examiner disagrees with this argument. Treatch discloses a repeater monitoring received signals and adjusting the frequency used by the repeater based on the monitored signals (See column 3 line 45 to column 4 line 8 of Treatch for reference to this process). The monitored signals correspond to the claimed control signals since they are used by the repeater to control its transmission and reception frequency settings. Thus Treatch discloses using received control signals to supervise the operation of a radio repeater such that the frequency channels used by the radio receiver and the radio transmitter change. It would have been obvious for combine this specific type of control signal (the frequency control signal disclosed by Treatch) with the control system and method disclosed by both Rhodes et al. and Laham et al.

In response to Applicant's argument that there is no rational reason to combine the teachings of Rhodes et al., Laham et al., and Treatch in the manner suggested, the Examiner respectfully disagrees. As discussed above, Rhodes et al. discloses a wireless communication system having subscriber stations that receive control signals wireless to supervise the operation of the subscriber station as well as the operation of devices connected to the subscriber station. Laham et al. discloses the use of a radio repeater in a system having subscriber station. Using a radio repeater has the advantage of extending the range of a wireless system. Thus, by including a radio repeater in the system of Rhodes et al., the wireless range of Rhodes et al. can be extended. Further it is pointed out that the Applicant's own specification discloses that a repeater is a known peripheral device used to spread the coverage area of a communication system (See page 2 lines 1-6 of the Applicant's specification). Treatch discloses using control signals to change the frequency used by the transmitter and receiver of a repeater. Changing the frequency used by a transmitter and receiver of a repeater has the advantage of preventing conflicts to reduce interference between radio repeaters (See column 3 line 56 to column 4 line 8 of Treatch for reference to this advantage). Thus, by including signals controlling the transmitter and receiver frequency channels of a radio repeater with the combined system of Rhodes et al. and Laham et al. interference between multiple transmitting devices can be reduced. Therefore, there is sufficient motivation to combine the teachings of Laham et al. and Treatch, with the teachings of Rhodes et al.

In response to Applicant's argument that Treatch teaches away from the claimed invention, the Examiner respectfully disagrees. Applicant argues that Treatch teaches a repeater independently adjusting the frequency channels without any outside control; however, since Treatch discloses that its repeater monitors outside signals received by the repeater and uses the received signals to adjust frequency channels (See column 3 line 63 to column 4 line 8 of Treatch), it is clear that the repeaters of Treatch cannot control frequency channels without using the monitored signals received from outside devices.

In response to Applicant's argument that Laham et al. teaches away from the claimed invention, the Examiner respectfully disagrees. Applicant again argues that the system 72 of Laham et al. is not analogous to the claimed subscriber station connected to and supervising the operation of a radio repeater; however, as pointed out above, the system 72 performs the same functions as the claimed subscriber station, and thus, is analogous to the claimed subscriber station.

In response to Applicant's arguments regarding the rejections of claims 6 and 11, the Examiner respectfully disagrees. Applicant argues that Archambaud et al. does not remedy deficiencies of the combined teachings of Rhodes et al., Laham et al., and Treatch; however, as shown above, the combined teachings of Rhodes et al., Laham et al., and Treatch do disclose all the limitations of the independent claims that claims 6 and 11 depend on, as well as contain proper motivation to combine those teachings.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Jason Mattis

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